1875MNRAS..36...43N

Occultation of Mars, observed at Windsor, N.S.W.

By John Tebbutt, Esq.

An occultation of the planet *Mars* by the Moon occurred here in full daylight on August 12, and was pretty well observed by means of the 4½-inch Equatoreal, and a power of 55. The disappearance took place at the dark limb, the first and last contact being noted at 2h 58m 10s·9, and 2h 58m 40s·9, local mean time, respectively. The rapid disappearance of the planet's disk was an exceedingly interesting phenomenon, its extinction taking place at a considerable distance from the Moon's illuminated disk. The line marked by the Moon's dark limb across the planet's disk was well defined, and appeared to move very rapidly till the last trace of the planet disappeared. Several small clouds were scattered over the sky during the afternoon and one of these unfortunately prevented the complete observation of the reappearance. Just as the Moon was emerging from the cloud the planet was observed as a small projection on the bright limb. I found it extremely difficult to fix the precise instant of the last contact owing to the ill-defined nature of the planet's eastern limb. This want of definition was due to the defective illumination of the limb, the planet being considerably past its opposition, and therefore gibbous. The western limb was, however, sharply defined. The last contact was noted at 4h 1m 24s·9,; the separation was entirely complete by 4h 1m 27s·9.

I may mention that, although the records of the Observatory for the past ten years contain a long list of lunar occultations of fixed stars, this is the only instance of an observed occultation of a planet.

Private Observatory,
Windsor, N. S. Wales,
1875, *August* 27.

Occultations of Stars by the Moon, observed at Forest Lodge, Maresfield. By Capt. Wm. Noble.

Occultation of ζ Arietis, October 16, 1875.

The star seemed to sink into the Moon's bright limb at

22h 59m 48s·7 L.S.T. = 9h 19m 53s·58 L.M.T.

It re-appeared instantaneously at the dark limb at

23h 54m 23s·7 L.S.T. = 10h 14m 19s·64 L.M.T.

Power 135, a positive (micrometer) eye-piece being em-

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ployed on my Ross Equatoreal of 4·2 inches aperture and 61 inches focal length.

Occultation of χ *Aquarii, November* 8, 1875.

The star disappeared instantaneously at the Moon's dark limb at

$0^h\ 43^m\ 5^s.9$ L.S.T. = $9^h\ 32^m\ 27^s.96$ L.M.T.

The reappearance was not observed. Power 77 with a positive (micrometer) eye-piece.

Note on a Successful Attempt to support a Mercury Trough by a compact and easily removable Arrangement.

By Col. J. F. Tennant, R.E., F.R.S.

Where the level error of a Transit Instrument, or the nadir point of a transit circle, is to be found by reflection of its wires from mercury, it becomes necessary to support the mercury trough, so as to ensure freedom from tremors. I have been much troubled with the job of doing this, and having succeeded in securing a practical result, think that the mode in which I have done it will be interesting to members of the Astronomical Society.

My Transit Instrument stands on a single pier on a solid metal round base, supported by three of Colonel Strange's foot screws; there is a diametral ridge about an inch high in the middle, and four inches wide on this joining the two pillars, and above this again come the arms which raise the transit-axis, and, when turned on the centre, enable it to be readily reversed. The object end of the telescope, when the counterpoises necessary to put the two ends of the telescope in equilibrium are attached, comes within an inch of the reversing carriage, and it has not been easy to get a steady support for the mercury owing to the very confined space for it.

Messrs. Cooke and Sons supplied an iron trough which rested on the reversing carriage. This was simply intolerable, and after trying it I had to give it up at once. I have hardly ever seen the wires in it. Captain Campbell first made a wooden bridge over the reversing arrangement, placing the mercury in a hollow and supporting it on blocks of wood; but this was difficult to remove for observing, and, though the wires *were* seen, it was evident to me that an arrangement of this sort would not answer, as vibrations would be too readily propagated. I then made a trough of amalgamated copper (I believe the idea is Prof. Pritchard's), and supported it in an iron tray on a layer

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